RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/524,827
Source: PCT/10
Date Processed by STIC: 2/26/05

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PCT

RAW SEQUENCE LISTING DATE: 02/26/2005
PATENT APPLICATION: **US/10/524,827** TIME: 10:41:29

Input Set : **A:\Final sequence list-13173-00006-US.txt**
Output Set: **N:\CRF4\02262005\J524827.raw**

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      4 <110> APPLICANT: Sauer, Matt
      5       Flachmann, Ralf
      6       Klebsattel, Martin
      7       Schopfer, Christel R
      9 <120> TITLE OF INVENTION: Process for preparing ketocarotenoids in genetically
modified
     10       organisms
     12 <130> FILE REFERENCE: 13173-00006-US
C--> 14 <140> CURRENT APPLICATION NUMBER: US/10/524,827
C--> 14 <141> CURRENT FILING DATE: 2005-02-18
     14 <150> PRIOR APPLICATION NUMBER: PCT/EP2003/009106
     15 <151> PRIOR FILING DATE: 2003-08-18
     17 <150> PRIOR APPLICATION NUMBER: DE 102 38 980.2
     18 <151> PRIOR FILING DATE: 2002-08-20
     20 <150> PRIOR APPLICATION NUMBER: DE 102 38 978.0
     21 <151> PRIOR FILING DATE: 2002-08-20
     23 <150> PRIOR APPLICATION NUMBER: DE 102 38 979.9
     24 <151> PRIOR FILING DATE: 2002-08-20
     26 <150> PRIOR APPLICATION NUMBER: DE 102 53 112.9
     27 <151> PRIOR FILING DATE: 2002-11-13
     29 <150> PRIOR APPLICATION NUMBER: DE 102 58 971.2
     30 <151> PRIOR FILING DATE: 2002-12-16
     32 <160> NUMBER OF SEQ ID NOS: 74
     34 <170> SOFTWARE: PatentIn version 3.3
     37 <210> SEQ ID NO: 1
     39 <211> LENGTH: 777
     41 <212> TYPE: DNA
     43 <213> ORGANISM: Nostoc sp. Strain PCC7120
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     47 <221> NAME/KEY: CDS
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     52 1               5                  10                  15
     54 ttg tca tcg aca atc aga gat gat aaa aat att aat aag ggt ata ttt       96
     55 Leu Ser Ser Thr Ile Arg Asp Asp Lys Asn Ile Asn Lys Gly Ile Phe
     56             20                  25                  30
     58 att gcc tgc ttt atc tta ttt tta tgg gca att agt tta atc tta tta      144
     59 Ile Ala Cys Phe Ile Leu Phe Leu Trp Ala Ile Ser Leu Ile Leu Leu
     60         35                  40                  45
     62 ctc tca ata gat aca tcc ata att cat aag agc tta tta ggt ata gcc      192
     63 Leu Ser Ile Asp Thr Ser Ile Ile His Lys Ser Leu Leu Gly Ile Ala
     64     50                  55                  60
     66 atg ctt tgg cag acc ttc tta tat aca ggt tta ttt att act gct cat      240
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67 Met Leu Trp Gln Thr Phe Leu Tyr Thr Gly Leu Phe Ile Thr Ala His
68 65                  70                  75                  80
70 gat gcc atg cac ggc gta gtt tat ccc aaa aat ccc aga ata aat aat      288
71 Asp Ala Met His Gly Val Val Tyr Pro Lys Asn Pro Arg Ile Asn Asn
72                  85                  90                  95
74 ttt ata ggt aag ctc act cta atc ttg tat gga cta ctc cct tat aaa      336
75 Phe Ile Gly Lys Leu Thr Leu Ile Leu Tyr Gly Leu Leu Pro Tyr Lys
76              100                 105                 110
78 gat tta ttg aaa aaa cat tgg tta cac cac gga cat cct ggt act gat      384
79 Asp Leu Leu Lys Lys His Trp Leu His His Gly His Pro Gly Thr Asp
80          115                 120                 125
82 tta gac cct gat tat tac aat ggt cat ccc caa aac ttc ttt ctt tgg      432
83 Leu Asp Pro Asp Tyr Tyr Asn Gly His Pro Gln Asn Phe Phe Leu Trp
84      130                 135                 140
86 tat cta cat ttt atg aag tct tat tgg cga tgg acg caa att ttc gga      480
87 Tyr Leu His Phe Met Lys Ser Tyr Trp Arg Trp Thr Gln Ile Phe Gly
88 145                 150                 155                 160
90 tta gtg atg att ttt cat gga ctt aaa aat ctg gtg cat ata cca gaa      528
91 Leu Val Met Ile Phe His Gly Leu Lys Asn Leu Val His Ile Pro Glu
92                  165                 170                 175
94 aat aat tta att ata ttt tgg atg ata cct tct att tta agt tca gta      576
95 Asn Asn Leu Ile Ile Phe Trp Met Ile Pro Ser Ile Leu Ser Ser Val
96              180                 185                 190
98 caa cta ttt tat ttt ggt aca ttt ttg cct cat aaa aag cta gaa ggt      624
99 Gln Leu Phe Tyr Phe Gly Thr Phe Leu Pro His Lys Lys Leu Glu Gly
100         195                 200                 205
102 ggt tat act aac ccc cat tgt gcg cgc agt atc cca tta cct ctt ttt      672
103 Gly Tyr Thr Asn Pro His Cys Ala Arg Ser Ile Pro Leu Pro Leu Phe
104     210                 215                 220
106 tgg tct ttt gtt act tgt tat cac ttc ggc tac cac aag gaa cat cac      720
107 Trp Ser Phe Val Thr Cys Tyr His Phe Gly Tyr His Lys Glu His His
108 225                 230                 235                 240
110 gaa tac cct caa ctt cct tgg tgg aaa tta cct gaa gct cac aaa ata      768
111 Glu Tyr Pro Gln Leu Pro Trp Trp Lys Leu Pro Glu Ala His Lys Ile
112                 245                 250                 255
114 tct tta taa                                                        777
115 Ser Leu
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121 <211> LENGTH: 258
123 <212> TYPE: PRT
125 <213> ORGANISM: Nostoc sp. Strain PCC7120
127 <400> SEQUENCE: 2
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129 1               5                   10                  15
132 Leu Ser Ser Thr Ile Arg Asp Asp Lys Asn Ile Asn Lys Gly Ile Phe
133             20                  25                  30
137 Ile Ala Cys Phe Ile Leu Phe Leu Trp Ala Ile Ser Leu Ile Leu Leu
138         35                  40                  45
141 Leu Ser Ile Asp Thr Ser Ile Ile His Lys Ser Leu Leu Gly Ile Ala
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145 Met Leu Trp Gln Thr Phe Leu Tyr Thr Gly Leu Phe Ile Thr Ala His
146 65                  70                  75                  80
149 Asp Ala Met His Gly Val Val Tyr Pro Lys Asn Pro Arg Ile Asn Asn
150                 85                  90                  95
153 Phe Ile Gly Lys Leu Thr Leu Ile Leu Tyr Gly Leu Leu Pro Tyr Lys
154             100                 105                 110
157 Asp Leu Leu Lys Lys His Trp Leu His His Gly His Pro Gly Thr Asp
158         115                 120                 125
161 Leu Asp Pro Asp Tyr Tyr Asn Gly His Pro Gln Asn Phe Phe Leu Trp
162     130                 135                 140
165 Tyr Leu His Phe Met Lys Ser Tyr Trp Arg Trp Thr Gln Ile Phe Gly
166 145                 150                 155                 160
169 Leu Val Met Ile Phe His Gly Leu Lys Asn Leu Val His Ile Pro Glu
170                 165                 170                 175
173 Asn Asn Leu Ile Ile Phe Trp Met Ile Pro Ser Ile Leu Ser Ser Val
174             180                 185                 190
177 Gln Leu Phe Tyr Phe Gly Thr Phe Leu Pro His Lys Lys Leu Glu Gly
178         195                 200                 205
181 Gly Tyr Thr Asn Pro His Cys Ala Arg Ser Ile Pro Leu Pro Leu Phe
182     210                 215                 220
185 Trp Ser Phe Val Thr Cys Tyr His Phe Gly Tyr His Lys Glu His His
186 225                 230                 235                 240
189 Glu Tyr Pro Gln Leu Pro Trp Trp Lys Leu Pro Glu Ala His Lys Ile
190                 245                 250                 255
193 Ser Leu
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199 <211> LENGTH: 789
201 <212> TYPE: DNA
203 <213> ORGANISM: Nostoc punctiforme
205 <220> FEATURE:
207 <221> NAME/KEY: CDS
210 <400> SEQUENCE: 3
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213 1               5                   10                  15
215 tta agt gct aaa gaa gat act gtt tgg ggg ctg gtg att gtc ata gta      96
216 Leu Ser Ala Lys Glu Asp Thr Val Trp Gly Leu Val Ile Val Ile Val
217             20                  25                  30
219 att att agt ctt tgg gta gct agt ttg gct ttt tta cta gct att aat     144
220 Ile Ile Ser Leu Trp Val Ala Ser Leu Ala Phe Leu Leu Ala Ile Asn
221         35                  40                  45
223 tat gcc aaa gtc cca att tgg ttg ata cct att gca ata gtt tgg caa     192
224 Tyr Ala Lys Val Pro Ile Trp Leu Ile Pro Ile Ala Ile Val Trp Gln
225     50                  55                  60
227 atg ttc ctt tat aca ggg cta ttt att act gca cat gat gct atg cat     240
228 Met Phe Leu Tyr Thr Gly Leu Phe Ile Thr Ala His Asp Ala Met His
229 65                  70                  75                  80
231 ggg tca gtt tat cgt aaa aat ccc aaa att aat aat ttt atc ggt tca     288
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232 Gly Ser Val Tyr Arg Lys Asn Pro Lys Ile Asn Asn Phe Ile Gly Ser
233                 85                  90                  95
235 cta gct gta gcg ctt tac gct gtg ttt cca tat caa cag atg tta aag      336
236 Leu Ala Val Ala Leu Tyr Ala Val Phe Pro Tyr Gln Gln Met Leu Lys
237             100                 105                 110
239 aat cat tgc tta cat cat cgt cat cct gct agc gaa gtt gac cca gat      384
240 Asn His Cys Leu His His Arg His Pro Ala Ser Glu Val Asp Pro Asp
241         115                 120                 125
243 ttt cat gat ggt aag aga aca aac gct att ttc tgg tat ctc cat ttc      432
244 Phe His Asp Gly Lys Arg Thr Asn Ala Ile Phe Trp Tyr Leu His Phe
245     130                 135                 140
247 atg ata gaa tac tcc agt tgg caa cag tta ata gta cta act atc cta      480
248 Met Ile Glu Tyr Ser Ser Trp Gln Gln Leu Ile Val Leu Thr Ile Leu
249 145                 150                 155                 160
251 ttt aat tta gct aaa tac gtt ttg cac atc cat caa ata aat ctc atc      528
252 Phe Asn Leu Ala Lys Tyr Val Leu His Ile His Gln Ile Asn Leu Ile
253                 165                 170                 175
255 tta ttt tgg agt att cct cca att tta agt tcc att caa ctg ttt tat      576
256 Leu Phe Trp Ser Ile Pro Pro Ile Leu Ser Ser Ile Gln Leu Phe Tyr
257             180                 185                 190
259 ttc gga aca ttt ttg cct cat cga gaa ccc aag aaa gga tat gtt tat      624
260 Phe Gly Thr Phe Leu Pro His Arg Glu Pro Lys Lys Gly Tyr Val Tyr
261         195                 200                 205
263 ccc cat tgc agc caa aca ata aaa ttg cca act ttt ttg tca ttt atc      672
264 Pro His Cys Ser Gln Thr Ile Lys Leu Pro Thr Phe Leu Ser Phe Ile
265     210                 215                 220
267 gct tgc tac cac ttt ggt tat cat gaa gaa cat cat gag tat ccc cat      720
268 Ala Cys Tyr His Phe Gly Tyr His Glu Glu His His Glu Tyr Pro His
269 225                 230                 235                 240
271 gta cct tgg tgg caa ctt cca tct gta tat aag cag aga gta ttc aac      768
272 Val Pro Trp Trp Gln Leu Pro Ser Val Tyr Lys Gln Arg Val Phe Asn
273                 245                 250                 255
275 aat tca gta acc aat tcg taa                                      789
276 Asn Ser Val Thr Asn Ser
277             260
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282 <211> LENGTH: 262
284 <212> TYPE: PRT
286 <213> ORGANISM: Nostoc punctiforme
288 <400> SEQUENCE: 4
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290 1               5                   10                  15
293 Leu Ser Ala Lys Glu Asp Thr Val Trp Gly Leu Val Ile Val Ile Val
294             20                  25                  30
297 Ile Ile Ser Leu Trp Val Ala Ser Leu Ala Phe Leu Leu Ala Ile Asn
298         35                  40                  45
301 Tyr Ala Lys Val Pro Ile Trp Leu Ile Pro Ile Ala Ile Val Trp Gln
302     50                  55                  60
305 Met Phe Leu Tyr Thr Gly Leu Phe Ile Thr Ala His Asp Ala Met His
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306 65                  70                  75                  80
309 Gly Ser Val Tyr Arg Lys Asn Pro Lys Ile Asn Asn Phe Ile Gly Ser
310                 85                  90                  95
313 Leu Ala Val Ala Leu Tyr Ala Val Phe Pro Tyr Gln Gln Met Leu Lys
314             100                 105                 110
317 Asn His Cys Leu His His Arg His Pro Ala Ser Glu Val Asp Pro Asp
318         115                 120                 125
321 Phe His Asp Gly Lys Arg Thr Asn Ala Ile Phe Trp Tyr Leu His Phe
322     130                 135                 140
325 Met Ile Glu Tyr Ser Ser Trp Gln Gln Leu Ile Val Leu Thr Ile Leu
326 145                 150                 155                 160
329 Phe Asn Leu Ala Lys Tyr Val Leu His Ile His Gln Ile Asn Leu Ile
330                 165                 170                 175
333 Leu Phe Trp Ser Ile Pro Pro Ile Leu Ser Ser Ile Gln Leu Phe Tyr
334             180                 185                 190
337 Phe Gly Thr Phe Leu Pro His Arg Glu Pro Lys Lys Gly Tyr Val Tyr
338         195                 200                 205
341 Pro His Cys Ser Gln Thr Ile Lys Leu Pro Thr Phe Leu Ser Phe Ile
342     210                 215                 220
345 Ala Cys Tyr His Phe Gly Tyr His Glu Glu His His Glu Tyr Pro His
346 225                 230                 235                 240
349 Val Pro Trp Trp Gln Leu Pro Ser Val Tyr Lys Gln Arg Val Phe Asn
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353 Asn Ser Val Thr Asn Ser
354             260
357 <210> SEQ ID NO: 5
359 <211> LENGTH: 762
361 <212> TYPE: DNA
363 <213> ORGANISM: Nostoc punctiforme
365 <220> FEATURE:
367 <221> NAME/KEY: CDS
369 <400> SEQUENCE: 5
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372 1               5                   10                  15
374 gta ctg aga agt aaa tct cag ttt aag ggg ctt ttc att gct att gtc      96
375 Val Leu Arg Ser Lys Ser Gln Phe Lys Gly Leu Phe Ile Ala Ile Val
376             20                  25                  30
378 att gtt agc gca tgg gtc att agc ctg agt tta tta ctt tcc ctt gac     144
379 Ile Val Ser Ala Trp Val Ile Ser Leu Ser Leu Leu Leu Ser Leu Asp
380         35                  40                  45
382 atc tca aag cta aaa ttt tgg atg tta ttg cct gtt ata cta tgg caa     192
383 Ile Ser Lys Leu Lys Phe Trp Met Leu Leu Pro Val Ile Leu Trp Gln
384     50                  55                  60
386 aca ttt tta tat acg gga tta ttt att aca tct cat gat gcc atg cat     240
387 Thr Phe Leu Tyr Thr Gly Leu Phe Ile Thr Ser His Asp Ala Met His
388 65                  70                  75                  80
390 ggc gta gta ttt ccc caa aac acc aag att aat cat ttg att gga aca     288
391 Gly Val Val Phe Pro Gln Asn Thr Lys Ile Asn His Leu Ile Gly Thr
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VERIFICATION SUMMARY DATE: 02/26/2005
PATENT APPLICATION: **US/10/524,827** TIME: 10:41:30

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L:14 M:270 C: Current Application Number differs, Replaced Current Application No
L:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date